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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/647,458 | 12/06/2000 | Markku Rasanen | Q-61067 | 7640 |

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EXAMINER

MATHEWS, ALAN A

ART UNIT PAPER NUMBER

2851

DATE MAILED: 05/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/647,458

Applicant(s)

RASANEN ET AL.

Examiner

Alan A. Mathews

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 December 0200.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,10-12,14,15,21-24,26,27 and 30 is/are rejected.
- 7) ☒ Claim(s) 8,9,13,16-20,25,28 and 29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7 and 8.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 27-29 are objected to because claim 27, lines 1 and 2, there is no proper antecedent basis in the claim for “the means for splitting the collimated beam and spectrally selecting the characteristic lines”. Also, in claim 28, there is no proper antecedent basis for “the obtained information about performance of the window glazing unit”, since the term “performance” was not previously recited. In addition, in claim 28, there is no proper antecedent basis in the claims for “the remote sensor unit”. Furthermore, in claim 28, line 4, there is no proper antecedent basis in the claims for “the lens”. In claim 29, there is no proper antecedent basis in the claim for “the sample container”. Appropriate correction is required.

Drawings

2. The drawings are objected to because Figure 1 does not show numeral “15” as recited on page 9, line 23, of the specification. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 7, lines 4 and 5, it cannot be determined what “to the emission of another component of the gas mixture, or the emission of the same gas component” modifies, and therefore the expression is vague.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1 and 4, 5, and 10, are rejected under 35 U.S.C. 102(e) as being anticipated by Eisemann et al. (U. S. Patent No. 5,920,400). Eisemann et al. discloses in figure 1 and column 6, lines 50-62, and column 9, lines 3-28, a method of determining a concentration of a gas component in a gas mixture contained in a closed space 1 (specimen vessel) made of glass. Column 9, lines 40-52, discloses applying alternating high voltage to the spacing 1 by pinlike

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electrodes 3 and 4 (which would have tapered ends). Column 9, lines 53-60, disclose optical waveguide 10 guiding radiation to spectrometer 12. Column 7, lines 14-26, further disclose using lenses or mirrors between the vessel and the spectral separator to guide and focus the fluorescent radiation toward the spectral separator. Figure 3 and column 10, lines 16-49, disclose an embodiment which detects impurities inside a lamp 15 (a closed space). The filters 19 and 20 and the photodiodes 21 and 22 in combination with computer 24 determine the concentrations of the impurities (see claims 3 and 4 of the patent to Eisemann et al.).

6. Claims 1, 2, 4, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Weekstrom (U. S. Patent No. 5,570,179). Weekstrom discloses in figure 1 and column 1, lines 18-50, and column 5, lines 54-67, a measuring chamber 4 (closed spacing) for determining the concentration of a gas component. Wall 16 is made of a dielectric material. Column 7, lines 46-67, and figure 2, discloses applying a rapidly alternating high voltage U to electrode 2. Column 8, lines 19-67 disclose determining the intensity of the components. Column 10, lines 1-48, disclose the use of a collimating lens 10 and focusing lenses 11a and 11b which collect emitted light and transmits the emitted light to detectors 12a and 12b. Column 10, lines 23-30 further states:

“Said filters 9a and 9b are provided with transmission bands adapted to such radiation wavelengths f_3 and f_4 which correspond to emission wavelengths desired for gas components of the gas mixture G. Thus, the detector 12a, along with its filter 9a,

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measures **radiation intensity** on one wavelength band and the second detector 12b, along with its filter 9b, measures **radiation intensity** on another wavelength band.”

This corresponds to “determining the intensity of at least two different spectral intervals, at least one of which corresponds to the gas component of interest”, as recited in claim 1. Figure 6, and column 11, lines 56-67, and column 12 disclose a measuring arrangement 41. The microprocessor 30 collects the measuring signals from each sensor and performs comparisons of the measuring values as well as necessary corrections to the concentration values. The device in Weekstrom is considered to be “non-invasive”. It is noted that Applicant has not defined what is meant by non-invasive. With respect to claim 2, elements 46 and 47 are the two sheets. With respect to claim 4, column 7, line 53, disclose that electrode 3 is grounded.

Claim Rejections - 35 USC § 103

7. Claims 2, 3, 11, 12, and 14, 15, 26, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eisemann et al. (U. S. Patent No. 5,920,400) as applied to claim 1 and in further view of Latta (U. S. Patent No. 5,198,773). Eisemann et al. discloses in figure 1 and column 6, lines 50-62, and column 9, lines 3-28, a method of determining a concentration of a gas component in a gas mixture contained in a closed space 1 (specimen vessel) made of glass. Column 9, lines 40-52, discloses applying alternating high voltage to the spacing 1 by electrodes 3 and 4 (which would be needle-like). Column 9, lines 53-60, disclose optical waveguide 10

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guiding radiation to spectrometer 12. Column 7, lines 14-26, further disclose using lenses or mirrors between the vessel and the spectral separator to guide and focus the fluorescent radiation toward the spectral separator. Figure 3 and column 10, lines 16-49, disclose an embodiment which detects impurities inside a lamp 15 (a closed space). The filters 19 and 20 and the photodiodes 21 and 22 in combination with computer 24 determine the concentrations of the impurities (see claims 3 and 4 of the patent to Eisemann et al.) . Thus, Eisemann et al. discloses the invention claimed except for disclosing that the spacing comprises two glass walls formed by two glass sheets spaced apart from each other. Latta discloses in figure 2 a method an apparatus for determining the percentage gas content of a glass window unit which has two glass walls 12 and 14. Column 4, lines 62-64 disclose the use of a double glazed unit. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to make the space or specimen vessel 1 in Eisemann et al. out of two glass sheets spaced apart from each other in view of Latta for the purpose of providing a easier specimen vessel to attached the electrodes to.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eisemann et al. (U.S. Patent No. 5,920,400). Eisemann et al. discloses in column 7, lines 22-26, mounting additional optical elements, such as **lenses**, between the vessel and the spectral separator, which serve to guide and focus the fluorescent radiation toward the spectral separator. Eisemann et al. discloses the invention (see paragraph #3 above) except for specifically stating that the lens is located at a distance of about .5 to 3 focal distances from the site of the local emission. It is old and well known in the optical art to place lenses within .5 to 3 focal distances from the image

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that the lens transmits. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have the lens recited in column 7, lines 22-26 of Eisemann et al. located at a distance of about .5 to 3 focal distances from the site of the local emissions in view of this old and well known concept for the purpose of better image transmission.

9. Claims 3, 11, 14, 15, 21-24, 26, 27, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weekstrom (U. S. Patent No. 5,570,179) in view of Latta (U. S. Patent No. 5,198,773). Weekstrom discloses in figure 1 and column 1, lines 18-50, and column 5, lines 54-67, a measuring chamber 4 (closed spacing) for determining the concentration of a gas component. Wall 16 is made of a dielectric material. Column 7, lines 46-67, and figure 2, discloses applying a rapidly alternating high voltage U to electrode 2. Column 8, lines 19-67 disclose determining the intensity of the components. Column 10, lines 1-48, disclose the use of a collimating lens 10 and focusing lenses 11a and 11b which collect emitted light and transmits the emitted light to detectors 12a and 12b. Column 10, lines 23-30 further states:

“Said filters 9a and 9b are provided with transmission bands adapted to such radiation wavelengths f_3 and f_4 which correspond to emission wavelengths desired for gas components of the gas mixture G. Thus, the detector 12a, along with its filter 9a, measures **radiation intensity** on one wavelength band and the second detector 12b, along with its filter 9b, measures **radiation intensity** on another wavelength band.”

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This corresponds to “determining the intensity of at least two different spectral intervals, at least one of which corresponds to the gas component of interest”, as recited in claim 1. Figure 6, and column 11, lines 56-67, and column 12 disclose a measuring arrangement 41. The microprocessor 30 collects the measuring signals from each sensor and performs comparisons of the measuring values as well as necessary corrections to the concentration values. The device in Weekstrom is considered to be “non-invasive”. It is noted that Applicant has not defined what is meant by non-invasive. With respect to claims 21, Weekstrom discloses in column 9, line 52, the use of interference filters 9a and 9b. With respect to claim 23, column 8, lines 19-67, the wavelengths of many different gases are disclosed and discussed.. In particular, column 8, lines 49-52, states “Exactly the same applies also to other gases measurable by means of this sensor and method of the invention”.. With respect to claim 24, Weekstrom discloses in column 11, lines 11 and 12, the use of CCD detectors. With respect to claim 27, Weekstrom discloses in column 9, line 53, the use of a spectrometer 14. Thus, Weekstrom discloses the invention except for disclosing that the spacing comprises a gas-filled window glazing unit. Latta discloses in figure 2 and column 4, lines 62-64, a method and apparatus for determining the percentage gas content of a double glazed unit which has two glass walls 12 and 14. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to make the space or specimen vessel 1 in Weekstrom a double glazed unit in view of Latta for the purpose of more accurate analysis of the gas concentration.

Allowable Subject Matter

10. Claims 8, 9, 13, 16-20, and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 7 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. Claims 28 and 29 would be allowable if rewritten to overcome objections to the claims, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

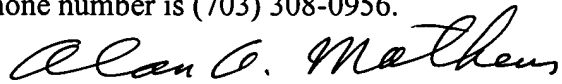
11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The patents on Applicant's PTO 1449s are cited for the same reasons Applicant cited them in his INFORMATION DISCLOSURE STATEMENTS.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan A. Mathews whose telephone number is (703) 308-1706. The examiner can normally be reached on Monday through Friday from 8:00 AM to 4:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams can be reached on (703) 308-2847. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Alan A. Mathews
Primary Examiner
Art Unit 2851

AAM
May 1, 2003